IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.(Currently Amended) A method of transmitting data using multi-carrier Code-Division Multiple Access (CDMA) for accessing a transmission system, the method comprising a~step~of~the acts of:

modulating the data to be transmitted using Orthogonal Frequency-Division Multiplexing (OFDM) for producing OFDM modulated data symbols; and a~step~of

spreading the OFDM modulated data symbols with spreading codes including a set of predefined sequences wherein~the~sequences~are predefined~so~that~they~that satisfy predetermined auto-correlation and/or cross-correlation criteria within a region around the origin,~defined~as~a central point of an Interference-Free Window (IFW), wherein a length of the IFW is greater than a channel delay spread of a transmission channel including a set of multi-paths

with associated time lengths, the transmission channel having a

channel delay spread defined as a time length corresponding to an

estimate of a difference between the time lengths of at least two

different multi-paths.

    2.(Currently Amended) A~The method as claimed in claim 1,

wherein the transmission system comprises a transmitter, a receiver

and a transmission channel, for transmitting the data from the

transmitter to the receiver via the transmission channel, ~~the~~

~~transmission channel including a set of multi-paths with associated~~

~~time lengths, the transmission channel having a channel delay~~

~~spread defined as a time length corresponding to an estimate of a~~

~~difference between the time lengths of at least two different~~

~~multi-paths,~~ the length of the Interference-Free Window (IFW)

depending on the channel delay spread.

    3.(Currently Amended) A~The method as claimed in claim 1,

wherein the sequences are such that their off-peak partial

autocorrelation and partial cross-correlation values are zero

within the Interference-Free Window (IFW).

4.(Currently Amended) A ~~A~~ The method as claimed in claim 2, wherein the sequences are such that they comprise zero gaps.

5.(Currently Amended) A transmitter for transmitting data using multi-carrier Code-Division Multiple Access (CDMA) for accessing a transmission system, the transmitter comprising:

a modulator for modulating the data to be transmitted using Orthogonal Frequency-Division Multiplexing (OFDM) for producing OFDM modulated data symbols; and

a mixer for spreading the OFDM modulated data symbols with spreading codes including a set of predefined sequences, wherein the sequences are predefined so that they satisfy predetermined auto-correlation and/or cross-correlation criteria within a region around the ~~origin, defined as~~ a central point of an Interference-Free Window (IFW), wherein a length of the IFW is greater than a channel delay spread of a transmission channel including a set of multi-paths with associated time lengths, the transmission channel having a channel delay spread defined as a time length corresponding to an estimate of a difference between the time

lengths of at least two different multi-paths.

    6.(Currently Amended) A method of receiving multi-carrier

data sequences transmitted via a transmission system using multi-

carrier Code-Division Multiple Access (CDMA) for accessing the

transmission system, the data sequences being OFDM modulated before

being spread with a set of predefined sequences satisfying

predetermined auto-correlation and/or cross-correlation criteria

within a region around ~~the origin, defined as~~ a central point of an

Interference Free Window (IFW), the method comprising a step of

demodulating the received multi-carrier data sequences with respect

to a predefined set of sub-carriers and with respect to the set of

predefined data sequences, wherein a length of the IFW is greater

than a channel delay spread of a transmission channel including a

set of multi-paths with associated time lengths, the transmission

channel having a channel delay spread defined as a time length

corresponding to an estimate of a difference between the time

lengths of at least two different multi-paths.

    7.(Currently Amended) A receiver for receiving data sequences

transmitted via a transmission system using multi-carrier Code-

Division Multiple Access (CDMA) for accessing the transmission

system, the data sequences being OFDM modulated before being spread

with a set of predefined sequences satisfying predetermined auto-

correlation and/or cross-correlation criteria within a region

around ~~the origin, defined as~~ a central point of an Interference-

Free Window (IFW), the receiver comprising a set of rake combiners

tuned to associated sub-carriers for demodulating the received data

sequences, wherein a length of the IFW is greater than a channel

delay spread of a transmission channel including a set of multi-

paths with associated time lengths, the transmission channel having

a channel delay spread defined as a time length corresponding to an

estimate of a difference between the time lengths of at least two

different multi-paths.

    8.(Currently Amended) A computer readable medium embodying a

computer program product ~~for a transmitter computing~~ including a

set of instructions, which when loaded in ~~the receiver~~ a

transmitter, causes the ~~receiver~~ transmitter to carry out the

method as claimed in claim 1.

9.(Currently Amended) A computer readable medium embodying a computer program product ~~for a receiver computing~~ including a set of instructions, which when loaded in ~~the~~ a receiver, causes the receiver to carry out the method as claimed in claim 6.

10.(Currently Amended) A system comprising at least a transmitter and a receiver for transmitting data from the transmitter to the receiver using multi-carrier Code-Division Multiple Access (CDMA) for enabling the transmitter to access the transmission system, the data to be transmitted being modulated using Orthogonal Frequency-Division Multiplexing (OFDM) before being spread with a set of predefined sequences wherein the sequences are predefined so that they satisfy predetermined auto-correlation and/or cross-correlation criteria within a region around ~~the origin, defined as~~ a central point of an Interference-Free Window (IFW), wherein a length of the IFW is greater than a channel delay spread of a transmission channel including a set of multi-paths with associated time lengths, the transmission channel having a channel delay spread defined as a time length

corresponding to an estimate of a difference between the time
lengths of at least two different multi-paths.

    11.(New)   The method of claim 1, wherein the at least two
different multi-paths include a longest path having a maximum
length and a shortest path having a minimum length.

    12.(New)   The transmitter of claim 5, wherein the at least two
different multi-paths include a longest path having a maximum
length and a shortest path having a minimum length.

    13.(New)   The method of claim 6, wherein the at least two
different multi-paths include a longest path having a maximum
length and a shortest path having a minimum length.

    14.(New)   The receiver of claim 7, wherein the at least two
different multi-paths include a longest path having a maximum
length and a shortest path having a minimum length.

    15.(New)   The system of claim 10, wherein the at least two

different multi-paths include a longest path having a maximum

length and a shortest path having a minimum length.